

Community food insecurity and role of agriculture extension in rural development

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Availability of food on a sustainable basis throughout the year is of prime importance in a country. The part of agricultural extension in the maintainable progress of rural areas has not been completely utilized to understand sustainable rural societies. An operative extension scheme of any country plays a highly significant role in the growing procedure. Nevertheless, a lot of criticism is being done in Pakistan for not resulting in remarkable improvement crop yield and wanted constructive changes in the rural earnings. Innovative enterprises in the form of dissolution and distribution; contributing methods to extension, and the usage of novel info and communication skills have been engaged to increase the competence and efficiency of the facility. An extension organization that could encourage supportable farming and solve community growth problems like food security is in utmost necessity.

Keywords: Crop production, outstanding, supportable farming, rural-livelihood, necessity.

INTRODUCTION

Tremendous increase in prices of cereals and other agricultural commodities have recorded in past few weeks (Consoli *et al.*, 2023). Price inflation of domestic commodities remains elevated in nearly entire low-, middle-, and high-income republics (Kartal and Depren, 2023). Prices of fertilizer prices have dropped from their highest point in the start of 2022 however continue at highest rate factually in the whole year (Alexander *et al.*, 2022). Food Price Index (FFPI) of Food and Agriculture Organization (FAO) decreased for the 9th successive month. A current World Bank news piece demanded for a complete change in farming and nutrition schemes to alter commodity production, delivery, and consumption (Gregorioa and Ancog, 2020). A combined report issued from UN Global Action Plan and United Nations System on Child Wasting demanded immediate action to safeguard the highly susceptible kids in the fifteen republics firmly affected by the unequalled diet and food catastrophe (Kunyanga *et al.*, 2023). The export index also closed at high prices (Ameye *et al.*, 2021). Prices of rice and maize remained 4 and 3% greater, correspondingly, while wheat prices

remained 1% lesser compared with past fourteen days. On a yearly basis, prices of rice and maize are 16 and 10% greater, correspondingly, and wheat is 3% lesser. Wheat and maize prices 12 and 31% greater, correspondingly, compared with the prices in January 2021 however prices of rice prices 5% lesser (Consoli *et al.*, 2023).

Food Price Inflation data: Domestic commodity price rise (calculated on yearly basis in the commodity constituent of a country's Consumer Price Index (CPI) sustains maximum (Greenwood *et al.*, 2021). Maximum real inflation (41%) was recorded in Zimbabwe followed by Rwanda (28%), Lebanon (21%), Hungary (20%) while lowest and equal inflation (13%) was recorded in Slovakia, Montenegro, Lithuania (Fig.1) (World Bank data, 2023).

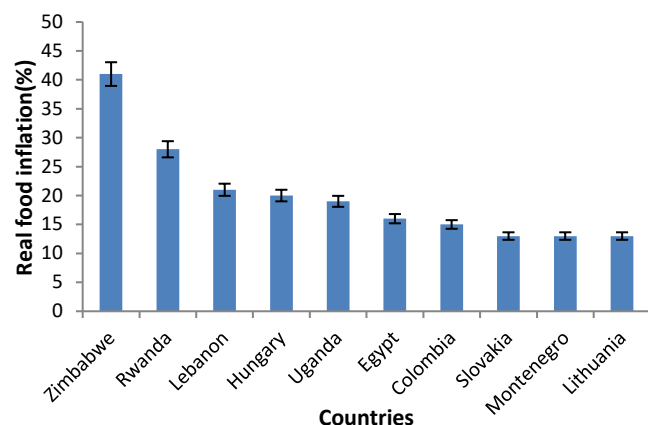


Figure 1. Variation in real food inflations across different countries.

Source: International Monetary Fund, Haver Analytics, and Trading Economics

Evolving glitches

Prices of fertilizers sustained high: Decrease in price of fertilizer has been throughout the year-2022 (Jagtap *et al.*, 2023) which may be due to drop down in consumer request instigated by difficulties with purchase and accessibility (Noort *et al.*, 2022). Problems regarding supply are too upsetting fertilizer marketplaces, comprising of production deficiencies in Europe, disturbances resulted by authorizations on Belarus and Russia, and trade limitations in China (Oxford Analytica, 2024).

FAO Food Price Index decreased in December however greater on a year-to-year base: The FAO Food Price Index (FFPI), a calculation of month-wise variation in prices of food agricultural food-stuff worldwide, dropped for the 9 successive months (World bank data, 2023). Its mean value was 132.4 points in December 2022, dropped down 2.6 points from November and 1.3 points with respect to December 2021. A severe reduction in worldwide prices of cooking oil and a modest drop in prices of meat and cereal resulted in the variation. Upsurges in dairy and sugar prices slightly counterbalance such types of drops. The FFPI actually trade-weighted mean prices of food stuffs (sugar, cereals, dairy, vegetable oils, and meat) from main farming marketplaces. The aforesaid food items constitute around 40% of gross agricultural trade of goods and are nominated for their prominence in worldwide trade and food security (Tsukhlo *et al.*, 2019).

Transforming food systems for healthy, sustainable outcomes: A recent World Bank blog post called for a systemic shift in agricultural and food systems to transform food production, transportation, and consumption. Global food production nearly quadrupled between 1961 and 2020 and increased 50 percent between 2000 and 2020 (Adhikari *et al.*, 2021). Despite these gains, more people are experiencing hunger than ever before, with many factors driving these

worsening trends (Clapp *et al.*, 2022), such as climate change and the war in Ukraine. The worldwide food system produces an estimated USD 12 trillion in social, ecological and economic costs yearly basis, comprising being the source of almost one-third of global greenhouse gas emissions (World Health Organization, 2020). In addition, food systems drive consumer choices toward unhealthy foods by keeping prices of healthy foods high. To resolve this, the blog suggests transforming food systems to build human capital, lift communities out of poverty, and increase climate resilience (Baumann *et al.*, 2023). The 2023 Global Forum for Food and Agriculture in Berlin provides an opportunity for agricultural leaders and global experts to discuss options, share experiences, and agree on solutions and activities to alter food supply schemes. It is likely that a major topic of discussion will be repurposing global agriculture and food support, which exceeds USD 700 billion a year, is often poorly targeted, and encourages unsustainable production. Agriculture support could be repurposed from price supports and input subsidies to implement sustainable practices such as climate-smart agriculture. In addition, public financing can be used to reduce private sector investment risks to meet higher social and environmental standards (Zougmore *et al.*, 2021). These shifts could reduce price distortion; promote resilient, sustainable productivity growth; strengthen value chains to increase food security and nutrition; bolster farmer incomes; and obtain better value for money in public programs (Jayne *et al.*, 2018). A complex, highly fragmented food system creates inefficiency and waste, resulting in the coexistence of hunger and excessive supply (Bradshaw *et al.*, 2020). Increasing farmers' and markets' access to information can reduce these inefficiencies. For example, digital technology can be used to improve connections between farms and consumers. Adopting data driven agricultural methods can increase crop yields and reduce waste, costs, and pollution (Paul *et al.*, 2022).

Council on food, agriculture, and resource economics: Webinar Details Importance of Tracking Global Food Security A recent webinar that the Council on Food, Agriculture, and Resource Economics hosted, Global Food Security (Savelli *et al.*, 2019). What Have We Learned, reviews methods that can be used to measure food security and examines lessons learned about policies and programs needed to attain food sufficiency with respect to global shocks. Presenters from four major organizations involved in monitoring global food security and implementing programs that increase food security discussed the analytics and actions that are most important in reducing global food security (Kunyanga *et al.*, 2023). The U.S. Department of Agriculture (USDA) made an initial presentation on how the U.S. government monitors global food insecurity, the metrics it uses, and how the USDA uses these data to inform decision making. The USDA produces an annual outlook report, the International Food Security Assessment, that provides data on



the status of global food availability and access, with projections of up to 10 years. These reports cover 77 low-middle and above middle income republics experiencing food insufficiency situations. The International Food Security Assessment defines food security as a caloric threshold of 2,100 calories per capita per day. Based upon this threshold, the report determines the existence of food insufficiency, under-nutrition population (Birungi *et al.*, 2023) and the gap food gap (the amount of food needed to raise consumption at every income level to the caloric threshold) for any country. With this report, the USDA leads efforts to inform and enhance policy decision making on current and emerging food insecurity, making this information available to USDA policy officials, the U.S. Congress, other related federal agencies, state and local governments, and organizations such as farming and industry groups.

Food security glitches in Asian continent: In Afghanistan, absence of admittance to principal facilities and food insufficiency are resulting in rising circumstances of cross-border travels, necessitating sustained attention on preparation and retort actions in adjacent republics, particularly Pakistan and Iran. A danger evaluation specifies that prices have sustained to increase and that the periodic drop in chance labor service has in progress to decrease buying authority for numerous. Though buying power has not however severely dropped, the danger relics great and is predictable to happen over the winter in regions facing huge snowfall, where path cessations will supplementary upsurge prices of domestic food-stuffs. The current prohibition on women labor in private enterprises has resulted in numerous worldwide administrations hanging actions. If the prohibition sustained in place, operative alternative retort will be tremendously thought-provoking. In case of livestock, lumpy dermal illness in cattle, which arose in May 2022, has extended to thirty provinces. In December, 125,000 cattle have been immunized against the illness, and the FAO plans to immunize 3,975,000 additional by July. If this ailment sustains, it can cause less milk produce, decreasing earnings of farmer communities. In Pakistan, growers seeded 20.77 million acres under wheat during December 2022 in spite of the stand-up flood water in arenas and former deficiencies of fertilizer. Though the Indus River System Authority supposes an around 18% water scarcity during the Rabi season 2022-23, water obtainability is projected to be 2% greater than average of last 10-year. The Federal Committee on Agriculture established the wheat production target at 28.4

million tons in the fiscal year 2022-23, which is 2 million tons greater compared with earlier yield year. This mark or target is projected to be attained owing to the 2022 Kissan Bundle maintained growers by providing agronomic advances, ensuring fertilizer availability on less price and decreasing electricity tariffs. On a yearly basis, the Pakistan Bureau of Statistics states that the prices of main food-stuffs augmented: 58.6, 56.8, 54.3, 48.9, 41.4 and 21.6% in case of wheat, eggs, pulse gram, rice, chicken and meat, respectively. The rates of merchandises augmented in December 2022 on a monthly basis: 13.4, 10.0, 9.7, 9.5, 8.8, 5.9, 5.4, 3.8, 3.7, 3.1, 1.5 and 0.3% in case of fresh fruits, onions, eggs, wheat, dried fruits, rice, chicken, beans, wheat flour, sugar, fresh milk and moong-bean, correspondingly.

National Consumer Price Index: Data showed that change in Consumer Price Index (CPI) across rural and urban areas was significantly different. Maximum CPI (41.19%) was recorded in perishable food items in rural area compared with urban area (32.42%). Non-perishable commodities were the next most inflated once, respectively (Fig.2).

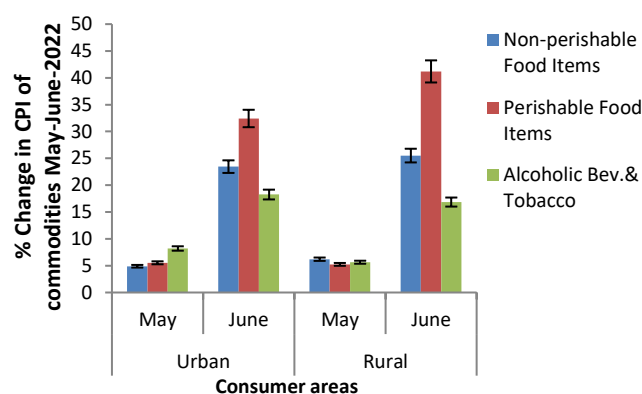


Figure 2. Percent change in Consumer Price Index (CPI) during May-June .

Data regarding food inflation from January 2022–December 2022 showed that highest inflation was recorded in case of Sri Lanka republic followed by Pakistan, Bangladesh while comparatively low inflation was recorded in India during January-December (Table 2). Mean value of inflation rate in South-Asia during the year-2022 showed that highest mean (60.00) inflation over the year-2022 while lowest (6.83) was noted in case of India republic. Mean values of Bangladesh

Table 2. Food inflation January 2022–December 2022 (percent change, year on year) in South Asian countries

Country	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	July-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
Pakistan	12.9	14.7	15.3	17.0	17.3	25.9	28.8	29.5	31.7	36.2	31.2	35.5
India	5.6	6.0	7.5	8.1	7.8	7.6	6.7	7.6	8.4	7.0	5.1	4.6
Bangladesh	5.7	6.2	6.3	6.2	8.3	8.4	8.2	9.9	9.1	8.5	8.1	7.9
Sri-Lanka	24.3	24.4	29.5	45.1	58.0	75.8	82.5	84.6	85.8	80.9	69.8	59.3

(Source of information: Word bank database, 2023)



and Pakistan republics were intermediate to these two countries (Fig.2)

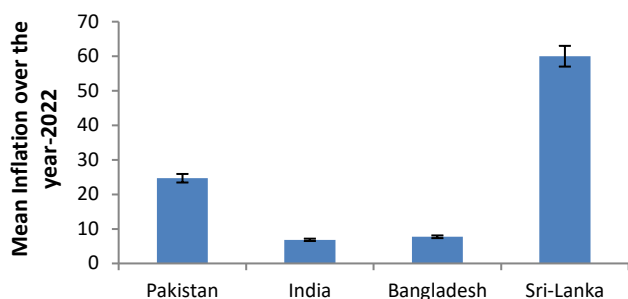


Figure 2. Mean value of inflation rate in South-Asia during the year-2022.

Role of extension workers in alleviating food security problems: Food insecurity has continued as severe threat throughout world especially in under-developed republics and is resulted due to factors such as quick population development rates, slight development in food production for human, restricted monetary capability for importation of commodities and insufficient external support. Agricultural extension, play a very key function in growth and development of low-income farmer community by guaranteeing satisfactory and timely access to appropriate guidance, with suitable motivations to accept novel skills if it matches to their agricultural and socioeconomic situations. This review article encloses the aspects of food insufficiency and food security; reasons and penalties of food insufficiency; the short- and long-run actions for lessening food insufficiency; the assets and feebleness of few extension work-schemes; and alterations in prevailing extension arrangements for the attainment of food sufficiency. The inferences are that: (a) developments in nutrition values and food sufficiency will include not only a specific rate of farming development, however decrease in population explosion; and (b) changes in extension facilities have the capability to increase farming yield, incomes of low-earning farmer community and increase food security (Maiangwa *et al.*, 2010).

Lessening food insecurity glitches

Short-run food security problems: Governments typically have three main options to address short-term food affordability issues: establishing communal protection webs, superseding to lower rates of food items, and guaranteeing delivery by sustaining stocks (Lassa *et al.*, 2019). In theory, communal protection web strategies like distribution of food assistance on urgent basis or transmissions to poor can be directed towards those whom are necessary. Safety nets can therefore be helpful whether or not the issue is related to changes in food prices because they have less negative impacts compared with plans that lower food prices for everyone. (Balana *et al.*, 2023). Contrarily, policies that aim to reduce food costs are frequently unsuccessful in addressing

a variety of food security issues, such as those brought on by reductions in farm output due to drought, for instance (Ajefu and Abiona, 2020). In view of currency shortages and disturbed domestic marketplaces, food assistance in specific can replace or increase market drifts of commercial imports and domestically produced commodities, averting price increase that would otherwise endanger the food security of low-income farmers that rely on marketplaces for commodities (Kansiime *et al.*, 2021). However, it is well known that food aid has some drawbacks. Continued food aid can destabilize prices, reduce incentives for domestic production, and make nations dependent on handouts. (Balana *et al.*, 2023). To decrease utility variations, republics had to upsurge commodities importations. As aforementioned, the capability to import on large scale is mainly motivated by the obtainability of foreign earning, which in numerous underdeveloped countries has been restricted by sluggish progress in export incomes and huge debt services. In numerous cases, nevertheless, greater commodities imports come at price of decreasing imports of necessary money merchandises and hence may badly impact long-term economic growth (Lassa *et al.*, 2019). Administratively simple to implement are strategy activities to lesser costs of domestic commodities, like the burden of export taxes or decrease in import prices (Ajefu and Abiona, 2020). In response to the sharp rise in global prices of basic foods at the end of 2007 and start period of 2008, about 45% of underdeveloped nations lowered tariffs, consumption taxes, or other export limitations on commodities (Wodon and Zaman, 2008). However, these methods might have unintentional effects. Like, an export limitation that drops the cost of domestic commodities too will case reduction in yield and augment necessity at a period of deficiency, will upset low-income grower who sell rice, and will deliver assistances to customers far over the poverty line. Strategies that aim to shield domestic food marketplaces from variations in the price of goods on the global market *also* frequently tend to fan the flames of the price upsurges they aim to control. Sharp increases in world prices during this time period were a result of key exporters imposing export restrictions in late 2007 and early 2008 (Ivanic and Martin, 2008). By removing or loosening these restrictions, the pressure on global prices may be lessened

Food security solution in the long run

(a) Consistent rises in the real incomes of the poor:

Increasing real household incomes by means of continued economic development and ensuring that marketplaces are operative in making food accessible for domestic acquisition as required are the two best ways to decrease domestic food insufficiency in the long term. To achieve such sustained income increases, progress strategies that increase the output of poor people's assets are crucial (Balboni *et al.*, 2022). Low-income farmers normally possess merely inexpert labor and land as their preliminary properties, and therefore rare human



or capital donations (Sharaunga and Mudhara, 2021). A current study in Africa discovered that households with food insecurity are typically poor and deficiency the resources to increase the efficiency of their labor and land (Lassa *et al.*, 2019). Augmented earnings of a significant number of rural households, it has been argued, not only creates employment and incomes in the non-agricultural sector however too decreases poverty because agricultural households represent significant marketplace for consumer goods, investment goods, and services (such as transportation), produced in the non-agricultural sector. Examples of such goods and services consist of, building materials for homes, shoes, protections, storm lamps and textiles (Ajefu and Abiona, 2020).

(b) Expanded trade in food and cash crops: Prolonged farm earnings and job chances for the rural poor can result from increased trade (Ren *et al.*, 2022). If there are local food markets, diversification may also increase farm incomes and job opportunities for the poor in rural areas, improving their capacity to buy food. Smallholder farmers may be able to increase their grain yield in commodities through the buying of fertilizers or by investing in better grain storing services with the money they earn from cash crops. The ability to import commodities and agricultural inputs is increased at the nationwide by the potential growth and improved constancy in foreign exchange incomes from a variety of trade. The advancement of technical change and widespread trade freedom can aid to augment the yield and earnings by guaranteeing that investment goes into the constrictive doings and by encouraging technical variation (Ivanic and Martin, 2008).

(b) Reorganizing and strengthening national research, extension, and credit services: The objective is to create more satisfactory technical packages and give smallholders the assistance they need to adopt new technologies widely (Kumari *et al.*, 2023). The following actions should be taken in Nigeria as part of the reorganization and strengthening of research, among others: I shifting the management of agricultural research institutes from the federal ministries of agriculture, which had direct administrative control over them, to the recently established Agricultural Research Council, which is predominately run by the researchers themselves. The fundamental idea behind developing this new body to oversee agricultural study has been to combine dedication to advancement with a huge contract of independence in research management and organization (Turienzo *et al.*, 2023).

Conclusion: Food security is an emerging issue of the current era. Prices of commodities have increased and yet continue to increase. The inflation rate disturbed too much and it has become difficulty for a poor person to buy even basic necessities like food. Developing countries are the most affected one especially the farmers with small land-holdings. Sometimes, restriction in trade resulted in immobility of

commodities across the country which results in artificially induced food deficiency. Prices of agricultural inputs like fertilizers have arisen beyond the farmer reach. In the prevailing climate of food insecurity, agriculture extension and rule department can play an important role for mitigation of food security problems and uplift the livelihood of poor farming community.

Recommendations:

- Unjustified ban on commodities should be lift up so that moment of food items be allowed across the country for customers.
- Government should provide subsidy on agricultural inputs like fertilizers, pesticides and seed so that farmers may able to buy healthy seed for crop production. This will alleviate the problems of food security worldwide
- Agricultural extension and rural development, private NGOs and other social organizations should collaboratively work for the betterment of livelihood of poor farmers.
- Politicians should revise the old polices and formulate new strategies keeping in view the food security and inflation rate disturbance problems for the improvement of community living standards.
- Extension workers should move village to village and work more effectively for the betterment of farming community.

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